



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/779,866	02/18/2004	Hans Butler	081468-0308313	6210
909	7590	09/14/2005	EXAMINER RUTLEDGE, DELLA J	
PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			ART UNIT 2851	PAPER NUMBER

DATE MAILED: 09/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/779,866	Applicant(s) BUTLER ET AL.	
	Examiner D. Rutledge	Art Unit 2851	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>02/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Oath/Declaration

1. An executed Declaration and Power of Attorney was received on 02 July 2004.

Specification

2. The abstract of the disclosure is objected to because of undue length. The abstract must contain no more than 150 words. Correction is required. See MPEP § 608.01(b).

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 2, 5 – 8 and 10 - 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Ueta (US Pat. No. 6,618,120).

Ueta has an exposure having an illumination system and projection system (not shown); a first support, stage 118, seen in Fig. 7, for the patterning device; a second support, stage 24, seen in Figs. 1, 2, which holds the holder 34 for the substrate; servo unit 119 positions the patterning device; servo unit 23 position the substrate stage; level sensor unit 96, shown in Fig. 4 detects the distance to the surface of the substrate to the fixed x-y plane; the feed-forward signal is feed to the servo unit 23. The calculating unit takes a derivative of the sensor data using the differential block 97; the calculating unit uses torque data and speed data uses a matrix 98, see col. 11, line 66 to col. 12, line 17.

Art Unit: 2851

The math function has plural terms – see Fig. 2 – 5. The memory unit is not shown, but would be a part on the control unit 46, 51. Claims 1, 2, 5 – 8, 10 - 18

The sensor unit detects an array of distance values are used in a matrix, columns 11 and 12. Claim 3

The substrate holder has a flat surface - claim 4

5. Claims 1 – 5, 11 - 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Matsuyama et al. (US PG PUB No. 2002/0171815).

The reference has a lithographic apparatus having an illumination system, first and second supports for the patterning device and the substrate, respectively; projection system; servo unit; memory unit see Fig. 30) and calculating unit (not shown); a focus leveling sensor (not shown) as part of the focus/level detecting system shown in Fig. 2; the detecting system use a feed forward control in an active manner. See paragraphs [0132, 0154, 0490, and 0510].

6. Claims 1 – 19 are rejected under 35 U.S.C. 102(b) as being anticipated by EP 1 232 513 (no inventor given, assigned to AMS Lithography B.V.).

The apparatus meets the feature of the claims. See pages 2, lines 30 – 40; page 4, lines 37 – 52; page 5, lines 13 – 15; page 6, lines 20 – 43; page 8, lines 31 – 35; and page 8, line 44 to page 9, line 2; see Fig. 1 shows the lithographic apparatus with the illumination system, first and second supports, the projection system and some of the measuring systems, see also Figs. 2 and 9.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ueta (US Pat. No. 6,618,120).

Ueta does not disclose a second substrate support and holder. One of ordinary skill in the art, at the time the invention was made, would have been motivated to use a dual substrate stage system in order to improve the throughput of the exposure operation.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Kawashima (US Pat. No. 5,602,400), Kawashima et al. (US Pat.

Art Unit: 2851


No. 5,118,957), Wakamoto et al. (US Pat. No. 6,118,515) and Yamada et al. (US Pat. No. 6,081,614) disclose surface position detecting methods in an exposure apparatus.

Response Data

Any inquiry concerning this communication or earlier communications from the examiner should be directed to D. Rutledge whose telephone number is (571) 272-2127. The examiner can normally be reached on Mon - Thurs, 6:00 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


D. Rutledge
Primary Examiner
Art Unit 2851

dr
9/9/05